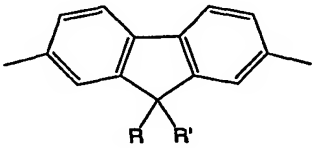
Claims

1. A method of forming an optical device comprising the steps of:

   - providing a substrate carrying a first electrode capable of injecting or accepting charge carriers of a first type;
   - depositing a polyfluorene over the first electrode; and
   - forming over the polyfluorene a second electrode capable of injecting or accepting charge carriers of a second type

   wherein the polyfluorene is heated before and after forming the second electrode.

2. A method according to claim 1 wherein the polyfluorene comprise optionally substituted units of formula (I):



(I)

   wherein R and R' are independently selected from hydrogen or optionally substituted alkyl, alkoxy, aryl, arylalkyl, heteroaryl and heteroarylalkyl, and R and R' may be combined to form an optionally substituted monocyclic or polycyclic group.

3. A method according to any preceding claim wherein at least one of R and R' comprises an optionally substituted phenyl or C_4-C_{20} alkyl group.

4. A method according to any preceding claim wherein at least one of the heat treatment steps is at or below the glass transition temperature of the polyfluorene.

5. A method according to claim 4 wherein both of the heat treatment steps are at or below the glass transition temperature of the polyfluorene.

6. A method according to any preceding claim wherein the optical device is an electroluminescent device.

7. A method according to claim 6 wherein the first electrode is an anode and the second electrode is a cathode.

8. A method according to claim 7 wherein the cathode comprises a metal having a workfunction of less than 3.5 eV.

9. A method according to claim 8 wherein the cathode comprises a layer of calcium.

10. A method according to any one of claims 7-9 wherein a layer of dielectric material is located between the polyfluorene and the cathode.

11. A method according to claim 10 wherein the layer of dielectric material comprises a metal fluoride.

12. A method according to any preceding claim wherein a layer of conductive organic material is provided between the first electrode and the first layer.

13. A method according to claim 7 wherein the layer of conductive organic material is PEDT / PSS.

14. A method according to any preceding claim wherein the polyfluorene comprises a plurality of regions including at least two of a hole transporting region, an electron transporting region and an emissive region.

15. A method according to claim 9 wherein polyfluorene comprises a hole transporting region, an electron transporting region and an emissive region.

16. A method according to any preceding claim wherein the polyfluorene is a blue electroluminescent material.

17. An optical device obtainable by the method according to any preceding claim.

18. An optical device according to claim 17 that is an electroluminescent device.

19. A method of forming an optical device comprising the steps of:

- providing a substrate carrying a first electrode capable of injecting or accepting charge carriers of a first type;
- depositing an organic semiconductor over the first electrode; and
- forming over the organic semiconducting material a second electrode capable of injecting or accepting charge carriers of a second type

wherein the organic semiconductor is heated below its glass transition temperature before and after forming the second electrode.

20. A method according to claim 19 wherein the organic semiconductor is a polymer.

21. A method according to claim 20 wherein the organic semiconductor is a polyfluorene.

22. A method according to claim 19 or 20 wherein the optical device is an electroluminescent device.

23. An optical device obtainable by the method according to any one of claims 20-22.

24. An optical device according to claim 23 that is an electroluminescent device.